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GEOLOGICAL SURVEY OF CANADA / COMMISSION GÉOLOGIQUE DU CANADA

OPEN FILE 2965

PRELIMINARY GEOLOGICAL MAP

NORTHERN ANIALIK RIVER VOLCANIC BELT AND THE NORTHEASTERN KANGGUYAK GNEISS BELT

NORTHWEST TERRITORIES

Scale 1:50 000 - Échelle 1/50 000

Kilometres 1 0 1 2 3 4 Kilomètres

Universal Transverse Mercator Projection
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Tokhokatak Bay
Grays Bay
Locanna Lake
Rhino Lake
Turtle Lake
Mistake Lake
No data available

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Colour map release through the Slave Province NATMAP Project

Digital cartography by V. Dohar and M. Sigouin, Geological Survey of Canada

Base map digitized from enlarged 1:50 000 topographic maps published by Surveys, Mapping and Remote Sensing

Copies of the topographical editions covering this map area may be obtained from the Canada Map Office, Department of Natural Resources Canada, Ottawa, Ontario, K1A 0E9

Mean magnetic declination 1994, 30°41' E, decreasing 24.9' annually
The proximity of the North Magnetic Pole causes the magnetic compass to be erratic in this area

LOCATION MAP

NATIONAL TOPOGRAPHIC SYSTEM REFERENCE
76 M/13 | 76 M/14 | 76 M/15
76 M/12 | 76 M/11 | 76 M/10
OF 2965
76 M/5 | 76 M/6 | 76 M/7

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Copies of this map may be obtained from the Geological Survey of Canada
601 Booth Street, Ottawa, Ontario K1A 0E8
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LEGEND

QUATERNARY
- Undifferentiated sand and gravel

PROTEROZOIC
- Gabbro and diabase, including ca. 750 Ma Franklin sills and ca. 1267 Ma Mackenzie dykes
- R — Argillite and sandstone of the Rae Group

PROTEROZOIC?
- Hornblende syenite, locally Kapar megacrystic

ARCHEAN
Kangguyak Gneiss Belt
- gnmx — Mixed gneisses, may include tonalitic, granitic, mafic and paragneiss, too finely interlayered to be subdivided at the present map scale
- gnm — Mafic gneiss, characterized by banded hornblende amphibolite +/- garnet
- gnt — Biotite +/- hornblende tonalitic orthogneiss, locally cut by abundant monzo- to syenogranite veins
- gng — Biotite +/- hornblende +/- muscovite granitic gneiss, cut by abundant monzo- to syenogranite veins that are locally Kapar-porphyritic
- gnp — Biotite +/- garnet +/- hornblende +/- orthopyroxene +/- cordierite paragneiss, locally intimately mixed with granitic gneiss and monzo- to syenogranite veins and lenses

Intrusive rocks associated with the Kangguyak Gneiss Belt
- K2 — Weakly to moderately foliate biotite +/- muscovite syenogranite to biotite quartz monzonite
- K1 — Weakly to strongly foliated hornblende gabbro to quartz diorite, locally cut by abundant monzo to syenogranite veins

Supracrustal rocks of the Anialik River Volcanic Belt
- cg — Polymictic metaconglomerate with flattened volcanic +/- sedimentary clasts and rounded to flattened granitoid clasts
- ps — Undifferentiated clastic metasedimentary rocks, dominated by psammite, and including semipelite and pelite
- if — Iron formation, including carbonate facies (magnetite + carbonate), oxide facies (magnetite + quartz) and silicate facies (grunerite + quartz +/- magnetite +/- garnet)
- ch — Chert, finely laminated (bedded?)
- cb — Carbonate (dominantly dolomite/ankerite), including exhalative carbonate interlayered with carbonate facies iron formation, and finely layered, possibly stromatolitic, meta-limestone
- Gossan (pyrite +/- pyrrhotite +/- chalcopyrite +/- sphalerite +/- malachite +/- magnetite)
- vmx — Mixed metavolcanic rocks too finely interlayered to be subdivided at the present map scale; may include rocks of mafic, intermediate and felsic composition
- vf — Metavolcanic and related intrusive rocks dominated by felsic compositions; subscripts q, t denote the presence of quartz and feldspar phenocrysts, respectively
- vif — Metavolcanic rocks dominated by intermediate to felsic compositions; may locally include minor mafic rocks
- vm — Metavolcanic rocks dominated by mafic compositions; pillowed flows distinguished by pillow symbol

Intrusive rocks associated with the Anialik River Volcanic Belt
- A5 — Massive to weakly foliated granodiorite to syenogranite, locally Kapar-megacrystic; accessory minerals include biotite, muscovite, hornblende
- A4 — Weakly to strongly foliated diorite to granodiorite; accessory minerals include biotite and hornblende
- A3 — Massive to moderately foliated plagioclase-phyric intermediate intrusive rock, interpreted as synvolcanic
- A2 — Massive to moderately foliated hornblende gabbro to quartz diorite (subscripts g, d denote areas dominated by gabbro and diorite, respectively)
- A1 — Moderately to strongly foliated pre- to synvolcanic tonalite to granodiorite of the Anialik River igneous complex (subscripts g, t denote areas dominated by granodiorite and tonalite, respectively)

PROTEROZOIC FAULTS
D5 fault:
- Displacement unspecified
- Dextral
- Sinistral
- Normal; ornament on hanging wall

D4 fault:
- Oblique sinistral thrust; ornament on hanging wall
- Oblique dextral thrust; ornament on hanging wall

Kinematic indicators (C-S fabrics, shear bands, asymmetric folds, stepped silicksnsides) associated with faults of any generation:
- Dextrail
- Reverse
- Sheared rock; displacement unknown
- Sinistral
- Normal

STRUCTURAL ELEMENTS OF UNSPECIFIED GENERATION (DOMINANT STRUCTURE IN OUTCROP)
- Dominant foliation (commonly S2 transposed into S3).
- Fold axial plane.
- Fold axis: symmetric.
- Z-asymmetric
- S-asymmetric
- Lineation ((unspecified type).
- Crenulation lineation.
- Mineral stretching lineation.
- Joint.

ARCHEAN STRUCTURES IN THE KANGGUYAK GNEISS BELT
D3:
- S3 gneissosity
- Fold of gneissosity; F3?

D2, D1:
- S1, S2 gneissosity

PRIMARY STRUCTURES
- Bedding; tops unknown
- Location of quartzite
- Location of meta-conglomerate.

ARCHEAN STRUCTURES IN THE ANIALIK RIVER VOLCANIC BELT AND ASSOCIATED INTRUSIVE ROCKS
D3:
- S3 foliation
- F3 fold axial plane.
- F3 fold axis: symmetric.
- Z-asymmetric
- S-asymmetric
- Intersection lineation (bedding/S3 or S2/S3).

D2:
- S2 foliation
- F2 fold axial plane.
- F2 fold axis: symmetric.

D1:
- S1 foliation

PRIMARY STRUCTURES
- Bedding; tops known
- Tops unknown
- Pillows; tops known
- Overturned.
- Pillow flattening plane (S2/S3)

ISOGRADS
- First appearance of hornblende in mafic rocks (ornament on high-temperature side)
- Fragmental rock

ALTERATION
- Silicification
- Carbonatization.

GEOLOGICAL CONTACTS
- Observed
- Inferred
- Approximate
- Limit of mapping

ASSAY RESULTS
- Gold > 200 ppb — Au
- Copper > 1000 ppm. — Cu
- Zinc > 1000 ppm — Zn

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